



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/538,417

11/10/2005

Gareth David Huntley Shaw

050446PCTUS

3622

26285 7590 01/26/2009  
K&L GATES LLP  
535 SMITHFIELD STREET  
PITTSBURGH, PA 15222

EXAMINER

COY, NICOLE A

ART UNIT

PAPER NUMBER

3672

MAIL DATE

DELIVERY MODE

01/26/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/538,417	<b>Applicant(s)</b> SHAW ET AL.	
	<b>Examiner</b> NICOLE COY	<b>Art Unit</b> 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 19, 23, 28 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19, 23, 28, and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 19, 23, 28, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parsley (20040244973) in view of Bohn et al. (USP 6306917).

With respect to claim 23, the Parsley reference discloses a plant for providing gas for downhole injection for pressure support in an oil reservoir for recovering of hydrocarbons and production of oxygenated hydrocarbons or higher hydrocarbons from natural gas, comprising: an air separation unit for production of an oxygen-rich fraction for supply to processes that require oxygen, and a nitrogen-rich fraction for injection; a reformer for conversion of a mixture of natural gas, water and oxygen or oxygen enriched air from the air separation unit into a synthesis gas comprising mainly H<sub>2</sub>, CO, CO<sub>2</sub> and small amounts of methane in addition to any inert gas, such as nitrogen; a synthesis unit for conversion of the synthesis gas for synthesis of higher hydrocarbons; means for injecting gas into the reservoir; means for transferring nitrogen from the air separation unit to the means for injecting gas; and means for transferring at least a part of a waste gas from the synthesis unit to the means for injecting gas, and a tail gas treatment unit for removing CO by a shift reaction and separation of hydrogen from the

Art Unit: 3672

remaining tail gas (paragraphs 0016, 0025, 0037, and 0044). With respect to claim 23, Parsley does not disclose the separation of hydrogen or means for introducing hydrogen into the F-T loop to adjust the ratio of H<sub>2</sub>/CO. Bohn et al. disclose separating hydrogen and introducing it to the FT loop to adjust the ratio of H<sub>2</sub>/CO in order to recycle gases and increase the H<sub>2</sub>:CO ratio in the synthesis gas. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parsley by including a H<sub>2</sub> recycle line as taught by Bohn et al. in order to recycle gas and increase the H<sub>2</sub>:CO ratio in the synthesis gas.

With respect to claim 19, the reference discloses further comprising means for transferring the remaining tail gas from the tail gas treatment unit to the means for injecting gas (paragraphs 0043 and 0044).

With respect to claim 32, the reference discloses a plant for providing gas for downhole injection for pressure support in an oil reservoir for recovering of hydrocarbons and production of oxygenated hydrocarbons higher hydrocarbons from natural gas, comprising: an air compression unit for production of compressed air for supply to processes that require air; a reformer for conversion of a mixture of natural gas, water and oxygen or oxygen-enriched air from the air separation unit into a synthesis gas comprising mainly N<sub>2</sub>, H<sub>2</sub>, CO, CO<sub>2</sub> and small amounts of methane; a synthesis unit for conversion of the synthesis gas for synthesis of higher hydrocarbons; means for injecting gas into the reservoir; and means for transferring nitrogen from the air separation unit to the means for injecting gas; means for transferring at least a part of the nitrogen rich waste gas from the synthesis unit to the means for injecting gas; and

Art Unit: 3672

a tail gas treatment unit for removing CO by a shift reaction and separation of hydrogen from the remaining tail gas (paragraphs 0016, 0037, 0025, and 0043-0044). With respect to claim 32, Parsley does not disclose the separation of hydrogen or means for introducing hydrogen into the F-T loop to adjust the ratio of H<sub>2</sub>/CO. Bohn et al. disclose separating hydrogen and introducing it to the FT loop to adjust the ratio of H<sub>2</sub>/CO in order to recycle gases and increase the H<sub>2</sub>:CO ratio in the synthesis gas. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parsley by including a H<sub>2</sub> recycle line as taught by Bohn et al. in order to recycle gas and increase the H<sub>2</sub>:CO ratio in the synthesis gas.

With respect to claim 28, the reference further discloses means for transferring the remaining tail gas from the tail gas treatment unit to the means for injecting gas (paragraphs 0043-0044).

### ***Response to Arguments***

3. Newly found reference Bohn et al. reads on the claims that were previously indicated allowable. Thus, the claims are not in condition for allowance as indicated above. Accordingly, this rejection is non-final.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE COY whose telephone number is (571)272-5405. The examiner can normally be reached on M, Tu, F, and every other Wednesday from 8:30am-4pm.

Art Unit: 3672

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David J. Bagnell/  
Supervisory Patent Examiner, Art Unit 3672

nac